

CMS/CDC Nursing Home COVID-19 Data Quality Assurance Process

Data quality checks were performed on the following resident and staff data fields:

- 1) number of resident admissions/readmissions;
- 2) number of COVID-19 confirmed cases;
- 3) number of COVID-19 suspected cases;
- 4) number of COVID-19 deaths; and
- 5) total resident deaths.

Any reporting facility that has entered data in any of these fields (1-5 above) are re-assigned a null value (.) if any of the following criteria are met more than three times: 1) the same value (> 0) is entered sequentially regardless of interval between any two entries; and 2) values entered in consecutive days increase in a cumulative pattern, potentially indicating a summation of values over time. The cut-points for the second criteria vary depending on the interval between consecutive days data are entered. In addition, if a death-related field meets one of these two criteria, associated data fields may also be re-assigned a null value to underscore the need for review and possible revision. For example, a COVID-19 death value meeting the above criteria will have the COVID-19 death and total death values re-assigned as null, and vice versa.

Additionally, facilities are excluded when either confirmed resident COVID-19 cases, admitted residents with COVID-19, resident COVID-19 deaths, confirmed staff COVID-19 cases, or staff COVID-19 deaths appear implausible relevant to each other or the total number of facility beds. Four criteria based on data reported on residents determine if a facility is excluded or included. Specifically, a facility's data is **excluded** based on data reported on residents if:

- 1) The ratio of cumulative confirmed resident COVID-19 cases and cumulative admitted residents with COVID-19 to total facility beds is greater than or equal to 1.5; that is, resident cases and admissions combined is at least 50% larger than total facility beds.
- 2) The ratio of cumulative resident COVID-19 deaths to cumulative confirmed resident COVID-19 cases and cumulative admitted residents with COVID-19 is greater than or equal to 1.5; that is, resident deaths is at least 50% larger than resident cases and admissions combined.
- 3) The ratio of cumulative resident COVID-19 deaths to total facility beds is greater than or equal to 1.15; that is, resident deaths is at least 15% larger than total facility beds. A facility is also excluded if the number of resident COVID-19 deaths was zeroed-out due to a quality check.

Exception: If any of these three conditions are met, a facility is still **included** if:

- 4) The facility reports fewer than 25 resident COVID-19 deaths **and** fewer than 25 confirmed resident COVID-19 cases.

Three criteria based on data reported on staff also determine if a facility is excluded or included. Specifically, a facility is **excluded** based on data reported on residents if:

- 5) The ratio of staff COVID-19 deaths to confirmed staff COVID-19 cases is greater than or equal to 1.5; that is, staff deaths is at least 50% larger than staff cases. If there are fewer than 10 reported staff deaths from COVID-19, the facility is included.
- 6) The ratio of staff COVID-19 deaths to total facility beds is greater than or equal to 1.5; that is, staff deaths is at least 50% larger than total facility beds.

- 7) The ratio of confirmed staff COVID-19 cases to total facility beds is greater than or equal to 1.0; that is, staff cases is at least equal to total facility beds.

This procedure aims to reduce misrepresentation and inaccuracies in the public reporting of these data. Nursing homes that fall under these conditions will be flagged as “N” in the “Passed Quality Assurance Check” column and their data will not be included in the public dataset.